

PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

A Holder for use in the Sharpening of the Blades of Tools

I, KENNETH BARTON COX, a British subject, of 17 Valeway Avenue, Cleveleys, Blackpool, Lancashire do hereby declare the invention, for which we pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention consists of a holder for the blade of a tool whilst being sharpened on an oil stone, whet stone or the like. For example, the holder may be used for the sharpening of the blades of carpenters' planes, spoke-shaves, and similar wood-working tools.

Holders for this purpose are known which include a strut or support inclining downwardly behind the blade and having a roller at its lower end, this roller being adapted to roll on the top of the oil stone itself during the backwards and forwards movements of the blade over the stone when sharpening the blade. This of course means that only one half the length of the stone can be used by the blade. Such known device also calls for special care in the reciprocation of the tool to prevent the roller running off the back end of the stone and, furthermore, as a general objection to the device, it is not good practice to have a roller running to and fro on the abrasive material of the stone. A further drawback to the known device is that it is not adjustable so as to vary the angle between the blade and the stone, according to the grinding angle at the cutting edge of the blade. This limitation is undesirable for example as between a normal jack-plane type of blade and a blade used in a shooting plane, where there may need to be a variation of grinding angle say from 30° to 12° whereas the holders hitherto proposed are not adaptable to any change of angle but give the same sharpening angle in all cases.

It is therefore the object of the present invention to provide an improved holder for the purpose described which allows of the use of the full length of the oil stone, which does not involve friction between itself and the

material of the stone, and which is adjustable so as to accommodate any grinding angle in the tool being sharpened.

According to this invention the improved holder comprises a substantially U-shaped frame provided with rollers at the ends of its limbs, said frame being of such width as to straddle the oil stone, whet stone or the like, so that said rollers move on the surface supporting the stone and, at or near the top of such frame there is a cross bar for supporting the blade being sharpened, this cross bar being rotatable about an axis transverse to the blade and means being provided to secure it in any selected angular position. The said cross bar embodies means for receiving and holding the blade to be sharpened, and may incorporate one or more locating members to fit into the usual central slot in the blade of a plane, thereby assisting in the correct alignment and positioning of the blade on the holder.

In the preferred forms of the invention, the said cross bar has downwardly-turned ends engaged by pivot members held in the said frame, and one of such pivot members is formed as a screw and is provided with a nut whereby that end of the cross bar may be clamped tightly against the adjacent part of the frame and thereby be held in any adjusted position around the axis of the screw. Conveniently one pivot member (the said screw) is fixed to the cross bar and rotates in the frame whilst the other is fixed to the frame and the cross bar rotates on it.

A representative example of holder according to the invention is illustrated in the accompanying drawing, wherein:—

Fig. 1 is a perspective view showing the holder in use and in its rearmost position relatively to the oil-stone;

Fig. 2 is a similar view showing the holder near its foremost position relatively to the oil stone;

Fig. 3 is a geometric rear view of the holder; and

Fig. 4 is a side view of the same.

As shown, a U-shaped frame or holder is made from flat steel and comprises two parallel side bars 1, 2 bent outwardly from and integral with the ends of a transverse bar 3, such transverse bar 3 being at a level below the upper ends of the side bars. The lower ends of the side bars are rounded and are drilled to receive fixed axle pins 4 for rollers 5, these pins being riveted over for permanent attachment to the bars, with the rollers on the outer sides of the bars (see Fig. 3). The width of the frame is such that the frame will straddle a normal oil stone 6 with the rollers 5 resting on the table or bench on which the oil stone rests. The frame therefore may move to and fro for the full length of the stone, without any change in its inclination to the horizontal.

The upper ends of said bars 1,2 of the frame are drilled to receive pivot pins for the downwardly-turned ends 7a of a cross bar 7, which latter extends from one side bar to the other. At the one end the pivot 8 is merely a rivet held by the side bar 1 and rotatable in the adjacent cross bar end 7a, whereas the other end of the cross bar 7 carries fixedly a screw 9 adapted to pass through a hole in the side bar 2 and into a nut 10, the inner face of this nut lying against the outer face of the said side bar 2. Therefore, when the cross bar 7 has been set to any position around the axis of the said pivots 8,9 the screwing up the said nut 10 causes the side bar 2 and the adjacent end 7a of the cross bar 7 to be clamped tightly together to hold the cross bar 7 in its selected angular position.

This position depends upon the angle at which it is desired to hold the blade, which in turn depends upon the grinding angle of the blade.

At the centre of the cross bar 7 is a transverse raised portion 11 adapted to fit within the usual central slot 12 of a plane blade 13 and, extending upwardly from this portion 11 is a fixed screw 14 on which is a further nut 15. By placing a blade 13 on the said cross bar 7 after removal of the nut 15, (or after passing that nut through the key-hole shaped end of the slot 12) and by then tightening up the nut 15 it is possible to clamp the blade tightly to the cross bar 7.

In use, therefore, with a blade fixed to the cross bar 7 at a suitable point in its length, and with the cross bar 7 adjusted to an angular position according to the grinding angle of the cutting edge of the blade, the reciprocating of the frame and blade to and fro over the full length of the oil stone 6 causes the cutting edge of the blade to be sharpened at the right angle. The peripheries of the two nuts 10 and 15 are milled, knurled or otherwise roughened so as to ensure a good

finger grip.

In a modification, (not illustrated) one end of the cross bar 7 and the adjacent side bar are marked with a scale and pointer whereby the cross bar may easily be set to a pre-determined angular position. Furthermore, the blades 13 may themselves be provided with a marker to determine their correct position on the cross bar 7, so as to standardise the arrangement.

In another modification, instead of the main part of the holder being a U-shaped frame made of flat sectioned material it may be a dome shaped or like rigid sheet metal pressing the upper part of which is shaped to fit the hand of the user, and having means for receiving the pivotal cross bar and for adjusting it in any selected position, whilst the lower part is in the form of wings to extend over the sides of the oil stone and carry the rollers 5.

WHAT I CLAIM IS:—

1. A holder for a blade whilst being sharpened on an oil-stone, whet-stone or the like comprising a substantially U-shaped frame provided with rollers at the ends of its limbs, said frame being of such width as to straddle the oil stone, whet stone or the like so that said rollers move on the surface supporting the stone and, at or near the top of such frame there is a cross bar for supporting the blade being sharpened, this cross bar being rotatable about an axis transverse to the blade and means being provided to secure it in any selected angular position, the said cross bar embodying means for receiving and holding the blade to be sharpened.

2. A holder according to claim 1, wherein the said cross bar incorporates one or more locating members to fit into the usual central slot in the blade of a plane, thereby assisting in the correct alignment and positioning of the blade on the holder.

3. A holder according to claim 1 or 2, wherein the said cross bar has downwardly-turned ends engaged by pivot members held in the said frame, and one of such pivot members is formed as a screw and is provided with a nut whereby that end of the cross bar may be clamped tightly against the adjacent part of the frame and thereby be held in any adjusted position around the axis of the screw.

4. A holder according to claim 1, constructed and adapted for use substantially as the example herein described with reference to and as illustrated in the accompanying drawing.

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COMPLETE SPECIFICATION

1 SHEET

This drawing is a reproduction of
the Original on a reduced scale

